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CLAIMS

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is as follows:

- 1 1. An optical system comprising
2 a doubly telecentric optical system including
3 an aperture at the juncture of the back focal
4 plane of said mirror and front focal plane of a
5 traditional camera objective, and
6 a camera.
- 1 2. The optical system of claim 1, wherein the
2 camera includes means for shifting a location of
3 an image sensor.
- 1 3. The optical system of claim 1, wherein the
2 doubly telecentric optical system includes a
3 curved concave mirror or mirror strip as an
4 objective element thereof.
- 1 4. The optical system of claim 3, wherein the
2 curved concave mirror or mirror strip is
3 spherical.
- 1 5. The optical system of claim 3, wherein the
2 curved concave mirror or mirror strip is
3 aspherical.
- 1 6. The optical system of claim 3, wherein said
2 curved mirror is a mirror strip.
- 1 7. The optical system of claim 1, wherein the
2 camera includes means for shifting a location of
3 an image sensor.

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1 8. The optical system of claim 1, wherein the
2 location shifting means is of a line scan variety.

1 9. The optical system of claim 1, wherein the
2 location shifting means is of an area scan
3 variety.

1 10. An optical system as recited in claim 6,
2 wherein said means for shifting a location of said
3 image sensor includes means responsive to a
4 distance between said objective element and an
5 object to be imaged.

1 11. The optical system of claim 1, wherein an
2 objective lens of said camera is a secondary
3 objective of said doubly telecentric optical
4 system.

1 12. A machine vision controlled system including
2 a controllable means for performing a
3 function,
4 a doubly telecentric optical system having a
5 concave mirror as an objective element thereof,
6 a camera including means for shifting a
7 location of an image sensor, and
8 means for processing data derived from said
9 image sensor to control said controllable means.

1 13. A machine vision system as recited in claim
2 12, further including
3 means for controlling said means for shifting
4 a location of said image sensor responsive to a
5 distance between said objective element and an
6 object to be imaged.

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1 14. A machine vision controllable system according
2 to claim 12 wherein the controllable means
3 includes an optical character recognition system.

1 15. A machine vision controllable system according
2 to claim 12, wherein the optical character
3 recognition system includes at least one conveyor
4 for transporting articles for view by the doubly
5 telecentric optical system.

1 16. A machine vision controllable system according
2 to claim 12, wherein the optical character
3 recognition system includes at least one planar
4 mirror.

1 17. A machine vision controllable system according
2 to claim 12, wherein the optical character
3 recognition system includes a focus detection
4 arrangement.

1 18. A sorting method for articles having visible
2 information on a face of each said article,
3 wherein said articles may be irregularly sized,
4 comprising the steps of:
5 moving, by automation, each article to a
6 doubly telecentric optical system, then imaging
7 the visible information on each article.

1 19. The sorting method of Claim 18, wherein said
2 visible information is a zip-code.